JPRS 74425

23 October 1979

Japan Report

No. 81

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50272-101

REPORT DOCUMENTATION PAGE	1. REPORT NO. JPRS 74425	2.	3. Recipient's Accession No.
4. Title and Subtitle JAPAN REPORT, No. 81			5. Report Date 23 October 1979 6.
7. Author(s)			8. Performing Organization Rept. No.
9. Performing Organization Name and Address Joint Publications Research Service 1000 North Glebe Road Arlington, Virginia 22201			10. Project/Task/Work Unit No. 11. Contract(C) or Grant(G) No. (C) (G)
12. Sponsoring Organization Name and Address As above			13. Type of Report & Period Covered 14.

15. Supplementary Notes

16. Abstract (Limit: 200 words)

This serial report contains press and radio coverage on political, sociological, economic, military, and scientific and technological developments.

17. Document Analysis a. Descriptors

JAPAN
Political
Sociological
Military
Economic
Science and Technology

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group 5C, 5D, 5K, 15C, 16D, 18I, 19F, 22B

18. Availability Statement Unlimited Availability Sold by NTIS Springfield, Virginia 22161	19. Security Class (This Report) UNCLASSIFIED	21. No. of Pages 33
	20. Security Class (This Page) UNCLASSIFIED	22. Price

(See ANSI-Z39.18)

OPTIONAL FORM 272 (4-77)
(Formerly NTIS-35)
Department of Commerce

JPRS 74425

23 October 1979

JAPAN REPORT

No. 81

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LICENSING CONTRACTS ON F-15, P-3C PRODUCTION

Tokyo JPE AVIATION REPORT-WEEKLY in English 3 Oct 79 pp 2-9

[Text]

The Ministry of International Trade and Industry (MITI) has released data on licensing contracts between Japanese and foreign (mostly American) manufacturers concerning local production of parts and components for the Air Self-Defense Force/McDonnell Douglas F-15 fighter-interceptor aircraft and the Maritime Self-Defense Force/Lockheed P-3C antisubmarine aircraft. A translation of the report follows:

*ASDF/MDC F-15

LICENSOR	LICENSEE	TECHNOLOGY	DATE OF CONTRACT
Astronautics Corp. of America	Hokushin Electric Co.	HSI and ADI	Sept.23,78
Hydraulic Research Div. of Textron	Teijin Seiki Co.	Assembly and testing of electro-hydraulic servo valves	"
"	Koito Mfg Co.	Filters, using metal net elements	"
Lear Siegler Inc.	Shinko Electric Co.	Generator systems	Aug.22, 78
Dynamic Controls Corp.	"	Armament control systems	Sept.28, 78
A-T-O Inc.	"	Contacters	Oct.20, 78

LICENSOR	LICENSEE	TECHNOLOGY	DATE OF CONTRACT
Société Francaise d'Equipements pour la Navigation Aérienne (SFENA, France)	Tokyo Keiki Co.	Horizontal gyros	Oct. 30, 78
General Electric Co.	Nittoku Metal Ind. Co.	Ammunition feeding systems for 20mm Vulcan machine guns	Nov. 1, 78
Crane Co., Hydro-Aire	Sumitomo Precision Co.	Antiskid control boxes	Nov. 3, 78
Sundstrand Corp.	Teijin Seiki Co.	Air and fuel valves	Nov. 16, 78
Cleveland Pneumatic Co.	Sumitomo Precision Co.	Main and nose landing gears	Nov. 16, 78
Teledyne Electronics Inc.	Toyo Communication Equipment Co.	Transponders	Nov. 23, 78
Pneumo Corp.	Sumitomo Precision Co.	Ailerons	Nov. 23, 78
Sperry Rand Corp.	Tokyo Keiki Co.	Production, servicing and modification of instruments	Nov. 19, 78
Deutsch Fastner Corp.	Nagoya Screw Mfg. Co.	Tapelock fastners	Nov. 25, 78
McDonnell Douglas Corp.	Shimadzu Ltd.	Head-up display systems	Nov. 25, 78
The Bendix Corp.	Tokyo Aircraft Instrument Co.	Oxygen regulator-survival kits	Nov. 29, 78

LICENSOR	LICENSEE	TECHNOLOGY	DATE OF CONTRACT
General Electric Co.	Japan Aviation Electronic Industry Co.	Automatic flight control systems	Nov. 30, 78
Pneumo Corp.	Kayaba Industry Co.	Diffusers	Dec. 12, 78
McDonnell Douglas Corp.	Shinko Elsctric Co.	Airborne electronic equipment	Sept. 28, 78
Pneumo Corp.	Teijin Seiki Co.	Nose wheel steering systems and flap drives	Dec. 12, 78
Rockwell Int'l Corp.	Mitsubishi Heavy Industries Ltd.	Servo cylinders	Dec. 12, 78
Swedlow Inc.	Mitsubishi Rayon Co.	Aircraft transparencies	Mar. 10, 79
Rockwell Int'l Corp.	Tokyo Aircraft Instrument Co.	Horizontal position indicators	Mar. 28, 78
Teledyne Industries Inc.	Shinko Electric Co.	Events history recorders for F100 engines	Mar. 27, 79
Litton Systems Inc.	Toshiba	Inertial naviation systems	Mar. 29, 79
Goodyear Aerospace Corp.	Nippon Goodyear K.K.	Wheels and brakes	Jan. 24, 79
Simmons Precision Products Inc.	Hokushin Electric Co.	Fuel gauge systems and liquid oxygen indicators	Feb. 10, 79

LICENSOR	LICENSEE	TECHNOLOGY	DATE OF CONTRACT
The Garrett Corp.	Mitsubishi Heavy Industries Ltd.	Jet fuel starters	Feb. 16, 79
Parker Hannifin Corp.	Teiji Seiki Co.	Hydraulic fuel valves and accumulators	Feb. 3, 79
Moog Inc.	Mitsubishi Heavy Industries Ltd.	Flight control systems	Jan. 4, 79
General Electric Co.	Toshiba	Lead computing gyro systems	Mar. 17, 79
Aircraft Products Media Inc.	Daikin Kogyo Co.	Lubrication oil and fuel filters for F100 engines	Mar. 31, 79
Hazeltine Corp.	Toyo Communication Equipment Co.	AN/APX-76A IFF Interrogators	Apr. 3, 79
General Electric Co.	Hokushin Electric Co.	Fuel gauges	Apr. 10, 79
TRW Inc.	Mitsubishi Electric Corp.	Fuel transfer booster pumps	Apr. 20, 79
McDonnell Douglas Corp.	Mitsubishi Electric Corp.	Electric apparatus	Apr. 20, 79
Rohr Industries Inc.	Ishikawajima-Harima Heavy Industries Co.	Fan ducts for F100 engines	Apr. 8, 79
EX-CELL-O Corp.	"	Augmentor spray manifolds	Apr. 10, 79

LICENSOR	LICENSEE	TECHNOLOGY	DATE OF CONTRACT
Sargent-Fletcher Co.	Shin Meiwa Industry Co.	Outer fuel tanks	April 10, 79
Rockwell Int'l Corp.	Mitsubishi Electric Corp.	Direction finders	Apr. 14, 79
Whittaker Corp.	"	Valves and actuators	Mar 1, 79
Lear Siegler Inc.	Kanto Aircraft Instrument Co.	Altitude meters and other instruments	May 3, 79
Magnavox Government & Industrial Electronics Co.	Mitsubishi Electric Corp.	ARC-164 radio	Apr. 14, 79
Rockwell Int'l Corp.	Nippon Electric Co.	TACAN navigation equipment	Apr. 11, 79
Sundstrand Corp.	Teijin Seiki Co.	Fuel valves	June 1, 79
McDonnell Douglas Corp.	Mitsubishi Heavy Industries Ltd.	Checkout equipment for airborne electronics	May 24, 79
Ronson Hydraulic United Corp.	Teijin Seiki Co.	Actuators and other equipment	Dec. 16, 78
McDonnell Douglas Corp.	Hitachi Ltd.	Datalinks	Dec. 16, 78
The Garrett Corp.	Shimadzu Ltd.	Air conditioners and auxiliary power units	Dec.29, 78
ITKK Corp.	Tokyo Keiki Co.	ATC minicomputer systems	Dec. 29, 78

LINCENSOR	LICENSEE	TECHNOLOGY	DATE OF CONTRACT
Plessey Dynamics Corp.	Mitsubishi Electric Corp.	Electro-mechanical actuators	May 12, 79
Explosive Technology Inc.	Daicel Ltd.	Canopies	May 8, 79
OEA Inc.	"	Devices for aircraft ejection systems	May 8, 79
TRW Inc.	Nittoku Metal Industry Co.	Forging of F100 engine turbine blades	May 31, 79
Ragen Data Systems Inc.	Tokyo Aircraft Instrument Co.	Aircraft instruments	June 10, 79
The Bendix Corp.	Tokyo Keiki Co.	Checkout systems for airborne electronics	July 14, 79
Thiley Industries of Arizona Inc.	Daicel Ltd.	Seat separators and ejection devices	"

*MSDF/Lockheed P-3C

The Garrett Corp.	Shimadzu Ltd.	Air-conditioners and starters	May 26, 79
The B.F. Goodrich Co., Engineered Systems Div.	Kayaba Industry Co.	Brakes and wheels	Aug. 14, 79
AMETEK Inc.	Tokyo Aircraft Instrument Co.	Lockheed type aircraft instruments	Aug. 16, 79

LICENSOR	LICENSEE	TECHNOLOGY	DATE OF CONTRACT
Kollsman Instrument Co.	Tokyo Aircraft Instrument Co.	Aircraft instruments	July 28, 79
Lear Siegler Inc.	Shimadzu Ltd.	Gearboxes	Aug. 9, 79
General Electric Co.	Tokyo Aircraft Instrument Co.	Tachometer - indicators	Aug. 31, 79
Simmons Precision Products Inc.	Hokushin Electric Co.	Aircraft oil and fuel gauges and torque measuring systems	May 30, 79
United Technologies Corp.	"	Temperature control systems	June 12, 79
EPSCO Inc.	Shimadzu Ltd.	Signal converters	June 5, 79
Astronautics Corp. of America	Hokushin Electric Co.	HSI, ADI and FDS	May 25, 79
Loral Corp.	Nippon Electric Co.	AM/ASA-66A auxiliary indicator systems	Feb. 24, 79
EDMAC Associates	Japan Radio Co.	AN/ARR-72 sonobuoy receivers	Mar.3, 79
General Electric Co.	Toshiba	Data processing systems	Mar. 17, 79
Datagraphix Inc.	Fujitsu Ltd.	Tactical display systems	Mar. 15, 79

LICENSOR	LICENSEE	TECHNOLOGY	DATE OF CONTRACT
MENASCO Inc.	Sumitomo Precision Co.	Main and nose landing gear	Apr. 26, 79
Sundstrand Corp.	Teijin Seiki Co.	Fuel booster pumps and engine fuel pumps	May 2, 79
Lear Siegler Inc.	Kanto Aircraft Instrument Co.	AFCS (AN/ASW-31)	May 3, 79
General Electric Co.	Hokushin Electric Co.	Fuel gauges	May 13, 79
Simmons Precision Products Inc.	"	Fuel and oil gauges and torque measuring systems	Aug. 30, 79
Singer Co.	Mitsubishi Precison Co.	G-suits, G-seats, central repeaters, etc.	Feb. 28, 79
The Bendix Corp.	Ishikawajima-Harima Heavy Industries Co.	Temperature control augmentators and fuel control systems for T56 engines	May 11, 79

CSO: 4120

GSDF CH-X SELECTION POSTPONED

Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 pp 7-8

[Text]

The GSDF will postpone selection of the CH-X, a replacement for the V-107 transport helicopter of its heliborne units, because of priorities given to the Bell AH-1S program to activate antitank helicopter squadrons during the FY '78 MTDP.

The Boeing-Vertol CH-47 and the Sikorsky CH-53 were among the candidates for the new GSDF helicopter to improve mobility and combat performance of heliborne units. The GSDF is only authorized to procure three V-107s during the FY '78 MTDP, including one for FY '80. These are to cover attrition.

The GSDF sources maintain that the service life of the V-107 can be extended a few years over the 15-year mark allowing delayed introduction of the CH-X under the FY '81 MTDP.

An average service life of 15 years is set for the V-107 on the basis of 300 flight hours yearly. The first six V-107s delivered in FY '66 will begin leaving service in early 1982 on this basis but longer service is possible, the same sources say, by reducing flight hours.

Another factor which assures continued use of the V-107 is that both engines and airframes have been in domestic production and there are no logistical problems.

CSO: 4120

MILITARY

ASDF-GSDF JOINT RESEARCH ON SAM DEFENSE SYSTEM URGED

Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 5

[Text]

Internal bureaus of JDA are urging that the ASDF and the GSDF should promote joint research on a new SAM air defense system prior to selection of new surface-to-air missiles to succeed Nike and Hawk SAMs. SAM survey teams from both services are currently visiting the US mainly to study the SAM-D Patriot of the US Army. The GSDF plans to outfit four Hawk units with the new SAM while maintaining another 4.5 units equipped with Improved Hawks. The ASDF intends to reequip all six of the Nike-J units with the new SAM. Both services want to decide on the new SAM so that programs can be launched in FY '82.

Under present circumstances, it is probable that the Patriot will be selected by both services and it is naturally expected that the SAM air defense systems of these services will be subjected to review and reorganization for an integrated system.

CSO: 4120

MILITARY

MAJOR ASDF PLANS FOR FY '80

Tokyo JPE AVIATION REPORT-WEEKLY in English 3 Oct 79 p 10

[Text]

Gen. Ryoichi Yamada, Chief of Staff, ASDF, said last week that the ASDF will promote six major plans in FY '80 with requested funds of total ¥1,068,200 million including ¥526,100 million on the follow-on disbursement basis. The second contract on F-15 fighter covering 34 aircraft will require ¥292,890 million. New plans cover work for modernization of the BADGE (base air defense ground environment) system and for replacement of the Nike-J SAMs, Gen. Yamada said.

Six major plans for FY '80 are 1) continuation of such work as activation of new units, upgrading electronic wafare capabilities, and strengthening base air defense, 2) studies on defense maneuvers and operations, 3) stockpiling support material and equipment, 4) modernization of the BADGE and Nike-J systems, 5) better personnel administration, and 6) facilities for improved training and exercises.

During FY '80, flight and ground crews will be sent to the US for training on the Grumman E-2C airborne early warning aircraft and orders for equipment and systems for service introduction of the aircraft will be issued. Preparations will be made for activation of the 306th Squadron, the sixth and the last F-4EJ unit, at Komatsu by the summer of 1981, while the 6th Squadron at Tsuiki will be reequipped with F-1 aircraft to become the third support fighter squadron of this type during the year.

Studies will be promoted on ASDF exercises coordinated with the USAF and airspace and facilities will be readjusted for improved flight training.

CSO: 4120

AAM PROCUREMENT PROGRAM FOR ASDF F-15

Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 5

[Text]

JDA plans to begin procurement of air-to-air missiles for the ASDF F-15 fighter in FY '80. The quantity of the AAMs to be ordered in FY '80 is set at 430 rounds covering the AIM-7F radar-homing and the AIM-9L infrared-homing AAMs.

About 130 AIM-7F missiles are scheduled for procurement through license production at MELCO which has been producing AIM-7E missiles for the ASDF F-4EJ fighter. The US licensor will either be Raytheon or General Dynamics. Delivery of the AIM-7F missiles for the ASDF F-15 will be made three years after contract award.

About 300 AIM-9L missiles will be procured through FMS (foreign military sales) contracts between Japanese and US governments. The AIM-9L is commonly used by F-4E and F-15 fighters.

CSO: 4120

COMMUNICATIONS EQUIPMENT INCREASES IN PROCUREMENT

Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 6

[Text]

Procurement of communication equipment for the Self-Defense Forces is showing a steady increase and the funds requested in the FY '80 draft budget total four times those of five years ago or ¥53,000 million. The amount is 23 percent up from the current fiscal year.

Funds for communications equipment in the defense outlay were about ¥13,900 million each in FY '75 and '76 but the amount was raised 64 percent up in FY '77 to total ¥23,100 million. In FY '78, the amount totaled ¥31,200 million, a 34 percent increase from FY '77. ¥43,100 million authorized for FY '79 is 40 percent up from last year.

The sharp increases in communication equipment procurement in the past few years reflect introduction of advanced weapons systems and reinforcement of support setups, sources observe. In addition to ¥53,000 million, TR&DI, JDA, is requesting ¥7,700 million in the FY '80 draft budget for research and development of communications equipment.

Major items to be ordered in FY '80 include the defense microwave communication network, automatic on-line telephone system, teletype, facsimile and other data transmission systems between defense facilities, and field radio communications systems.

Radar systems the GSDF plans to procure are those to detect howitzers, mortars and aircraft. The ASDF will order three-dimensional radars for air defense and the "buffer" system, a data link system between Grumman E-2C aircraft and the BADGE (base air defense ground environment) system. Most of the funds on request from the MSDF for communications equipment will go to new destroyers. About half of the cost of an advanced destroyer is occupied by electronics equipment, according to JDA.

MSDF WILL ACTIVATE NEW HELICOPTER UNIT IN FY '80

Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 pp 6-7

[Text]

The MSDF is taking delivery of two new DDHs, the Shirane and the Kurama, during 1980, increasing the DDH strength to four ships from two. At present, there are only two DDHs, the Hiei and the Haruna, in service with the MSDF.

The Hiei and the Haruna presently comprise the 51st Flotilla of the MSDF First Escort Fleet based at Yokosuka. The 121st Air Squadron at Tateyama trains flight crews and provides maintenance for helicopters of the Hiei and the Haruna.

With commissioning of the Shirane and the Kurama, a second DDH flotilla will be activated and based at Sasebo, Kyushu, as the 52nd Flotilla. A new helicopter squadron for this flotilla will be activated at Omura as the 122nd Air Squadron during FY '80.

Planned deployment of the four DDHs call for formation of the 51st Flotilla with the Hiei and the Shirane and the 52nd with the Haruna and the Kurama. The 52nd Flotilla belongs to the Sasebo-based MSDF Second Escort Fleet.

CSO: 4120

MSDF SHIPBUILDING PROGRAM UP TO FY '84

Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 7

[Text]

The MSDF plans to build sixteen destroyers during FYs '80-'84 covered by the FY '78 MTDP so that fleet strength in the spring of 1985 will total 58 destroyers against the authorized strength of 60.

In FY '80, the first year of the five-year program, three 2,900-ton DDs and one 1,400-ton DE will be ordered. Twelve ships will be ordered during FYs '81 - '84, including two 4,400-ton DDGs, seven 2,900-ton DDs, and three 1,400-ton DEs. One DDG will be ordered every other year while two to three DDs and one DE will be ordered annually.

In purallel with construction of new ships, modernization of ships in service will be promoted during the same period. Six destroyers will receive extensive modifications under the FRAM (fleet rehabilitation and modernization) program.

CSO: 4120

MSDF PLANS TO PROCURE SH-60B FOR EVALUATION

Tokyo JPE AVIATION REPORT-WEEKLY in English 3 Oct 79 pp 10-11

[Text]

The MSDF is promoting procurement of the Sikorsky HSS-2B antisubmarine helicopters for shipborne operation during the FY '78 MTDP, FYs '80-'84. But, the service plans to procure several of the US Navy/Sikorsky SH-60B LAMPS Mk. III helicopter during the same period for evaluation purposes to determine a replacement for the HSS-2B. The SH-60B is currently under development for deployment, over 200 aircraft, with the US Navy.

The MSDF is authorized to maintain ten fixed-wing antisubmarine aircraft squadrons, one PS-1 flyingboat squadron, and five landbased ASW helicopter squadrons. The HSS-2B helicopter is being deployed as the standard shipborne helicopter, while the HSS-2 and -2A helicopters are being relegated to landbased squadrons. The SH-60B is being eyed to replace the shipborne HSS-2B but the MSDF will require a replacement for the landbased ASW helicopter and test aircraft will be used to study feasibilities of adopting a common aircraft for both shipborne and landbased operations.

The future of the SH-60B program will be somewhat dependent on the MSDF's future policies on whether to maintain two squadrons of fixed-wing strike aircraft (at present, the S2F-1 Tracker) along with eight squadrons of the P-3C Orion.

CSO: 4120

MICV DEVELOPMENT TO START IN FY '80 WITH EXPENSE CUT

Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 8

[Text]

The Technical R&D Institute of the Japanese Defense Agency has decided to start research and fabrication of a new mechanized infantry combat vehicle (MICV) in FY 1980 at the request of the Ground Self-Defense Force (GSDF).

However, funds for this are said to have decreased as a result of intraagency coordination. The amount in the agency's budgetary requests for FY 1980 submitted at the end of August is believed to have totaled slightly less than ¥1,000 million from about ¥2,500 million as originally planned. The TR&DI intends to press intra-agency departments to allot more money to the project.

Although funds for the initial stage of the MICV research and development plan have been cut, the GSDF and the TR&DI have no intention of changing the fabrication process under a medium-term technology development plan.

The MICVs are designed for front line use with infantry to follow tanks. Similar vehicles have already been deployed in the United States, Europe and the Soviet Union. In the GSDF, ideas about research and development of the MICV technology have been unified so that the project can start in FY 1980.

The GSDF and the TR&DI intend to develop c stronger MICV than those deployed in other countries. Although European MICVs are equipped with 20 to 30mm-class machine guns they apparently plan to adopt a 35mm-class machine gun and the Ju-MAT guided missile as armament for the new MICV. The Ju-MAT missiles had been scheduled to be deployed by the GSDF from FY 1979.

In the institute's original fabrication project for FY 1980, more than two types of the MICV had been scheduled to be fabricated with expenses estimated at about ¥2,500 million.

CSO: 4120

MT-X ENGINE PROJECT UNDER REVIEW

Tokyo JPE AVIATION REPORT-WEEKLY in English 3 Oct 79 p 11

[Text]

Funds for development of a small turbofan engine on request by TR&DI, JDA, for FY '80 is currently under crucial review by the Ministry of Finance, sources report. TR&DI plans to start the development project with ¥5,750 million including ¥1,270 million for disbursement in FY '80, for the powerplant of the MT-X, ASDF's projected new twinjet two-seat multi-purpose trainer. Based on the XF3 engine, six units of the MT-X engine will be fabricated for various phases of functional tests, prior to the MT-X airframe development program currently in the planning stage.

The MT-X engine project is one of the two new major TR&DI projects for FY '80, another being a project on an advanced torpedo for the MSDF.

CSO: 4120

MHI TO RECEIVE SECOND CCV CONTRACT

Tokyo JPE AVIATION REPORT-WEEKLY in English 3 Oct 79 pp 11-12

[Text]

The Central Procurement Office of JDA has decided to award the second contract for development of the CCV (control-configured vehicle) to Mitsubishi Heavy Industries (MHI) for FY '79. A ¥3,418 million contract for detail designing and fabrication of components of the CCV will be awarded before the end of March 1980, following the ¥150 million first contract for basic designing awarded in FY '78 to MHI.

For the CCV project being promoted by TR&DI as one of its "theme studies," in-house research work independent from requests from the Self-Defense Forces, the CCVT (CCV team) was organized in July this year with specialists from five airframe manufacturers. The joint engineering team comprises thirty-five engineers including twenty-five from MHI, six from KHI, and one each from Shin Meiwa Industry and NIPPI (Japan Aircraft Mfg.). Parts suppliers are providing technical assistance to the team for development of an advanced, highly maneuverable supersonic combat aircraft of the future. MHI will submit its proposals to JDA for the second contract in December this year.

During FY '80, detail designing of the CCV based on the T-2 supersonic trainer will be promoted. Fabrication of major components, including the FBWC (fly-by-wire computer) control system, horizontal and vertical canard wings and air combat flaps, will be promoted.

Modification of a T-2 airframe for the CCV experimental aircraft will be promoted with ¥4,000 million to be requested for FY '81. Modification work will start in September 1981 and be completed in late 1982.

The first flight is scheduled for December 1982, followed by a two-year intensive flight test program by TR&DI.

BRIEFS

NEW HELICOPTER--The ASDF is promoting studies on new aircraft for two different duties--long-range transport and short-haul heavy-lift service to support remote radar sites. Although procurement of new aircraft for long-range transport missions is outlined "to be examined separately" from the FY '78 MTDP, procurement of 13 helicopters to replace the Kawasaki-Vertol V-107 has been authorized. Due to this, it is probable that the ASDF will decide on a V-107 helicopter replacement ahead of the long-range transport aircraft. Some sources predict that a new helicopter capable of heavy-lift duties as well as rescue missions assigned to the V-107 will be selected in time for a budget request for FY '81. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 5]

F-15 AIS ORDERED--As part of the support equipment for the ASDF F-15 fighter, JDA last week placed a 5,588.7 million yen order with Bendix Corp. through C. Itoh Aviation, for the first set of the AIS (avionics intermediate shop) complete with spares. The AIS, worth 4,749 million yen, will be delivered by the end of September 1981. The spares will be delivered by March 31, 1981. JDA intends to deploy the AIS at each ASDF F-15 base and the first set will be installed at Nyutabaru airbase. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 6]

CREW TRAINED IN U.S.--For operation of the Lockheed P-3C aircraft, the MSDF plans to train 300 crews in the United States, including flight and ground personnel. The first five of the 45 aircraft are scheduled for delivery in FY '82 and 200 MSDF personnel will be sent to the U.S. in FY '80 for training. An additional 100 will be trained in the U.S. in FY '81. Orders are being placed for ground support and crew training equipment. A special support unit will be activated in FY '80 within the MSDF to handle acoustic data processing for operation of the aircraft. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 7]

CHU-MAT PROJECT--The Chu (medium)-MAT research project of the TR&DI, JDA, will enter its third and final year in FY '80 with about 2,000 million yen. Following the basic study and component development phases in FYs '78 and '79, prototypes will be fabricated during FY '80 for use with the GSDF. The Chu-MAT is the third antitank missile the GSDF plans to adopt in its standard weapons inventory. The first missile was the Model 64 MAT, of which deployment will be completed in FY '80. Procurement of the Ju(Heavy)-MAT as the Model 79 antiship/tank missile started this year. [Text] [Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 9]

CSO: 4120

ECONOMIC

EXPANSION OF TRADE RELATIONS WITH MIDDLE EAST

Beirut THE ARAB WORLD WEEKLY in English 22 Sep 79 pp 3-5

[Text] At a time when other export markets for Japan, such as the United States, Europe and South Asia, are resisting Japanese penetration of their economies, the Middle East has been willing to take practically everything the Japanese have to offer, whether it is transistor radios or petrochemical plants.

The Middle East now accounts for about 20% of Japan's exports, whereas before the oil crisis it accounted for less than 10%. This has made the far Eastern Nation the second exporter in importance to every major country in the region.

The visits of Japanese Foreign Minister Sunao Sonoda early last year to Kuwait, the UAE, Saudi Arabia and Iran, and Prime Minister Takeo Fukuda in September to Iran, Saudi Arabia, Qatar and the UAE were aimed at strengthening this trading relationship. The hope behind this was to develop interdependence to balance Japan's dependence on the Middle East for oil. With this in mind, Fukuda stressed during his trip that Japan could be very important to the Middle East, just as the Middle East is to Japan, mainly through the transfer of technology, in direct technical assistance programs and joint ventures in the rich oil producing states with long term soft loans. By fostering interdependence Japan hopes to guarantee its oil supplies whatever happens in the Middle East, develop its export business in that region, and foster economic and political stability so as to ensure that the oil and export trade is undisturbed.

Japanese businessmen welcomed Fukuda's trip when they realized the importance of expanding trade relations with Arab countries. The Japanese private sector had for a long time suffered from the lack of the government's knowledge of the Middle East market especially in 1973. The suffering continues as a result of the Japanese bureaucratic system which places difficulties in the way of bank loans and financing, and of the absence of a specific political and economic policy towards the region.

Japan is known to be importing 80% of its oil needs from the Middle East with Saudi Arabia alone supplying 30%. Its imports from the area are worth more than its imports from any other major region of the world.

According to statistics its imports from Saudi Arabia last year were worth more than its imports from the whole of Europe. The point now is that the era when Japan was getting oil easily and without defining its political attitude in the Middle East is gone. One major Arab country, for instance, had made it crystal clear at the beginning of 1978 that Japan should play an actively positive role vis-a-vis the Arab-Israel dispute. In other words, it should use its economic power to influence the countries connected with the Middle East crisis, while at the same time extending economic aid to include the non-oil producing Arab countries. Fukuda was scheduled to visit Egypt during his Mideast tour, but the visit was canceled because it would have coincided with the Camp David summit on September 6.

The Japanese private and government sectors show marked interest in establishing strong ties with the Saudis. The government, for instance, has expressed willingness to back the Saudi petrochemical complex to be built by the Mitsubishi group. The $3,000 mn complex has a capacity of 300,000 tons of ethylene, and Japan has given assurances it will help in marketing the production. Another field for cooperation is water desalination. The Japanese ministry of international trade and industry is undertaking a five year study of the project and has already suggested a program in this field to the Saudi ministry of planning. The total cost of the study is estimated at five bn yen.

In Algeria, the Nippon Steel Company is undertaking the biggest steel project in the Middle East by offering engineering services, including the training of workers, technical consultancy and consultant services for the construction of the new plant. The project's target is to produce ten mn tons a year and it is the only project in which Nippon has direct participation. The same firm is carrying out a survey to modernize the steel plant in Helwan, an industrial town 40 kilometers south of Cairo, at the request of the Japanese government.

In Qatar, a mixed commission comprising experts from the two countries is studying cooperation with Japan in the field of extraction and liquefaction of natural gas. Japan imports about 800,000 tons of such gas every year. Japan has also agreed to participate in joint projects in Qatar, including a cement plant, a steel plant as well as a desalination plant.

Japanese companies will construct a gas liquefaction plant and a seaport at Oum Said, 45 kilometers south of Doha. The steel plant with a capacity of 400,000 tons per year, is being constructed with the help of Kobe Steel and Tokyo Boeki which hold 20 and 10 percent of the shares respectively.

Thus, the export of factories constitutes the main export item for the Japanese to the Middle East, followed by cars electric equipment and projects.

Factories exports reached in 1977 $8.4 bn, while in 1976 they reached $8 bn.

Japanese businessmen considered the Middle East the partner in Japan's foreign trade--a partner competing with the United States in exports and in imports, Japanese experts mention three competitive position in the Middle East markets:

--Stressing all sorts of technology, and not simply heavy technology, in the sense that it includes the training of engineers and sharing in planning. The problem is that European and American businessmen have a better knowledge of Middle East markets and for this reason they conclude their deals quickly, while the Japanese waste more time in studies and surveys.

--Financial establishments should be improved. In Japan there are two financial institutions--The Overseas Fund for Economic Cooperation and the Japanese Import-Export Bank. The Fund finances government loans, while the Bank finances companies of the private sector. Another factor is Japan's backwardness, compared to Europe and America, in the system of insurance. The third factor is that the yen is not widely used and its market value fluctuates often.

--Marketing capacity. Japan is strengthening its capacity in this field by sending experts to Middle East markets and by cooperating with the governments and specialized agencies in the region.

At present, Japan is anxious to foster its relations with the states of the Middle East in particular. It wishes to ensure the continual flow of oil and at the same time it cooperates with Middle Eastern oil-producing countries to lengthen as much as possible the period of using this oil, of finding alternative sources of energy and of achieving economic progress for the region after the oil depletion.

CSO: 4120

FRONT-WHEEL DRIVE CARS TO DOMINATE WORLD MARKET

Tokyo KYODO in English no time given 29 Sep 79 OW

[Text] Tokyo, 29 Sept, KYODO--Keen competition appears flaring up among automakers in Japan, the United States and Europe over what is now classified as "FF cars" in short. In the Japanese industry's view, the world auto market will be dominated by the front-engine, front-wheel drive cars in the near future.

Amid reports General Motors Corp is pressing forward with plans to retool its assembly lines to switch to production of small cars with front-wheel drive transmission, Japanese automakers are also gearing up for increased production of FF subcompacts. West European producers, pioneers in development of front-wheel drive cars, appear certain to join the race.

Industry insiders are forecasting that if the growing surge toward them continues, front-wheel drive cars will secure a share of around 25 percent of the Japanese market in two to three years. In the first eight months of this year, domestic sales of FF cars totaled 296,084--15.8 percent of new registrations. The share compares with 14.6 percent in all of 1978 and 11.3 percent the previous year.

The front-wheel drive car has done away with a propeller shaft and a universal joint to transmit power from the engine to the rear wheel. And, hence, it provides more room and comfort to the driver and passengers plus raises fuel efficiency.

In six European countries, combined production of such cars accounted for 56.8 percent of all new cars that rolled off the assembly lines in 1978.

American automakers are required under law to improve the average fuel economy of their cars. By 1985, they must produce cars that deliver 27.5 miles (44 kilometers) per gallon, against 18 miles (28.8 kilometers) at present. To measure up to the requirement, the producers find no

choice but to scale down the sizes of their cars. As a result, the downsized, FF cars are becoming their choice.

There was talk General Motors is moving to increase production of front-wheel drive cars to 30 percent of the total turnout in 1983 and to 60 percent in 1985.

At present, front-wheel drive cars on the road account for 9.9 percent of all cars sold in the United States, compared with 0.8 percent in 1977.

Amid the global trend toward such cars, Japan's export of FF cars in the first eight months totaled 671,306, by far outrunning the sales at home.

CSO: 4120

BRIEFS

OFFSHORE DRILLING--Kitakyushu, 29 Sept KYODO--The Japan National Oil Corporation will begin offshore drilling northwest of here in October or later for subsea footings to tether the world's first floating oil-tank farm, corporation officials said Saturday. Under the project, eight tanks with a total capacity of 5.36 million kiloliters of crude oil will be chained two-third submerged behind a breakwater near O-Jima and Me-Jima islands about eight kilometers from here near the western side of Kammon Strait. The corporation will negotiate with fishery cooperatives on compensation of the loss of their fishing rights near the two uninhabited islands. [Text] [Tokyo KYODO in English no time given 29 Sep 79 OW]

CSO: 4120

IDEMITSU KOSAN SETS UP GEOTHERMAL COMPANY

U.S. Company Involved

Tokyo KYODO in English no time given 21 Sep 79 OW

[Excerpts] Tokyo, 21 Sept, KYODO--Idemitsu Kosan Co will establish a subsidiary effective October 1 to investigate possibilities of geothermal development in various places in Japan. According to the company, the subsidiary "Idemitsu Geothermal Co" will be capitalized at yen 100 million.

Earlier, Idemitsu Kosan signed a technical cooperation contract with Republic Geothermal Inc, a leading geothermal development company in the United States.

The new company expects to be producing annually 250,000 kilowatts of steam-gathered electric power by 1985. It plans to conduct similar geothermal development overseas in the future.

Test Borings in 1980

Tokyo KYODO in English no time given 20 Sep 79 OW

[Excerpts] Tokyo, 20 Sept, KYODO--Idemitsu Geothermal Corp will be headed by Kiyomi Yamashita, managing director of Idemitsu Kosan. The company will conduct detailed study in five areas--Hokkaido, Tohoku, Kanto, Chubu and Kyushu--and test boring in the fall of 1980.

Future plans call for development of 50,000 to 100,000 kilowatts of geothermal heat in 1985 to be sold to electric power firms using geothermal heat.

Idemitsu Kosan established its energy development office in March 1977 in a bid to develop overall energy. Since then, the company has been participating in coal liquefaction and coal development overseas.

At present, Japan's total geothermal heat used by electric power firms is 168,000 kilowatts, including those in Kokonoe Town in Oita Prefecture and Shizukuishi Town in Iwate Prefecture. According to a long-term energy supply and demand prospect by the government, future plans call for 3.5 million kilowatts of geothermal heat development in 1990 and 7 million kilowatts in 1995.

CSO: 4120

DEFENSE TECHNOLOGY ASSOCIATION UNDER PLANNING

Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 4

[Text]

Four defense-related industrial organizations are studying establishment of a "Defense Technology Promotion Association" to encourcge research and development of military technology in Japan. They cre the Federation of Economic Organizations of Japan (Keidanren), the Society of Japanese Aerospace Companies (SJAC), the Japan Shipbuilders Association and the Japan Ordnance Association. The Japanese Defense Agency (JDA) favors their plan and intends to back it.

Major powers in the world adopt various defense policies according to their international positions, diplomacy, politics and economies. However, they commonly place importance on defense technology because it contributes to development of the economy as well as overall science and technology.

It is necessary for national security to build up technology for defense. Investment in research and development of defense technology is deemed necessary for coping with deployment of new weapons and threats from abroad. Therefore, developed nations made large investments in development of military technology. The United States uses about 10% of its defense budget for research and development, Britain about 12% and France about 5 percent. In stark contrast, Japan alloted only 1.6% of its FY 1979 defense budget to that area, industry leaders point out.

In 1977, State Minister for Defense Michita Sakata expressed a desire to appropriate at least 2 percent of the defense budget for research and development, calling the area as one of the most important of the defense buildup program.

This encouraged officials of the JDA and defense-related industries to promote defense technology, leading them to study establishment of the new association.

Meanwhile, JDA sources say Japan's dependence on the U.S. for defense technology will change as that country is intensifying its policy of exporting only complete weapons. If Japan fails to develop its own technology, the U.S. may become reluctant to supply weapons and technology, they add.

In this respect, former and incumbent officials of the JDA's Technical R&D Institute welcome the plan.

Before World War II, the Japanese government had its own facilities to promote design and fabricate weapons for research and development. However, the existing JDA has no such arm, depending on private industries for production as well as detailed design and fabrications.

Furthermore, the JDA has been utilizing a part of private industries' defense technology which is considered advanced. This is another reason for JDA's interest in the plan.

CSO: 4120

FJR ENGINE TEST AT NGTE SCHEDULED FOR EARLY 1981

Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 pp 2, 3

[Text]

High altitude tests of the FJR710/600 prototype fanjet engine of 5.5-ton thrust class developed by Japan will be conducted at the National Gasturbine Establishment (NGTE) in the United Kingdom in January-March, 1981, according to the ERAAE (Engineering Research Association for Aero-jet Engines), a consortium of Japanese aero engine manufacturers, engaged in the national fanjet aero engine development project. The high altitude tests at NGTE will culminate 10-years of efforts for the project. MITI, in charge of the project, is requesting ¥2,643 million in the FY '80 draft budget for the project which will be suspended in favor of an Anglo-Japanese joint commercial engine program currently under discussion.

Two units of the FJR710/600 engines have already been completed, and the third unit is due to be completed in December.

Japan lacks facilities for high altitude tests and the prototype engine of Phase One of the national project was tested at NGTE.

CSO: 4120

SJAC TO STUDY COMMERCIAL USE OF FLYINGBOAT

Tokyo JPE AVIATION REPORT-WEEKLY in English 26 Sep 79 p 2

[Text]

The Society of Japanese Aerospace Companies (SJAC) plans to activate a special committee soon to study commercial application of flyingboats. The move is in line with the interim report of the Aircraft and Machinery Industry Council, an advisory body to the Minister of International Trade and Industry, made in August on future government policies toward the aircraft industry including commercial application of flyingboats. The report recommended studies on use of flyingboats in commercial services to cope with difficulties in obtaining land for airports and solving related environmental problems.

Japan is one of few nations where flyingboats are in production and service. While Canadair of Canada produces the CL-215 twin-engined amphibious flyingboat mainly for fire-fighting missions, Shin Meiwa Industry's PS-1 antisubmarine and US-1 sea rescue four-engined flyingboats are in production for services only with the MSDF.

SJAC's committee, however, will make studies on more basic problems such as potential demand for commercial service by flyingboats in local communities, economic advantages of flyingboat bases over airports, air traffic control and other technical aspects related to operation. The committee will compile a report on its studies by the end of March 1980.

CSO: 4120

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